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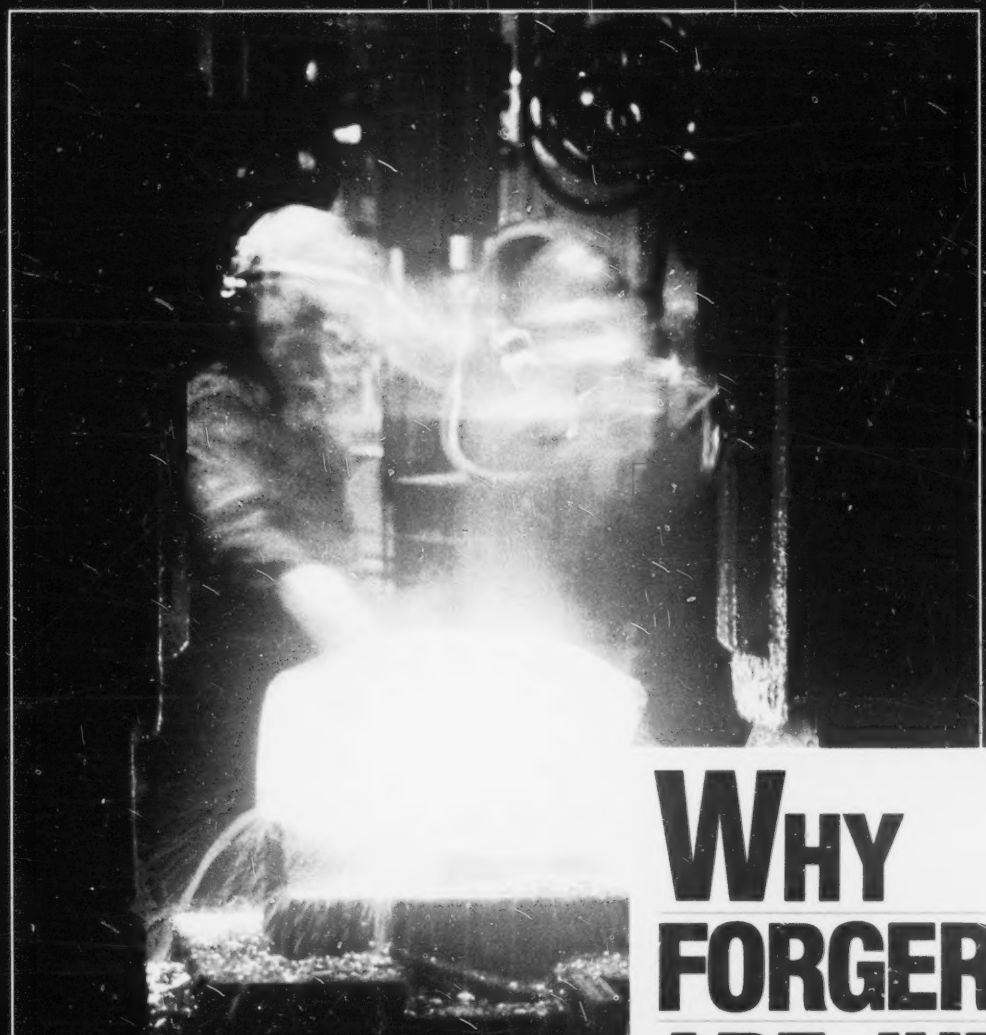
March 7, 1986

IRON AGE

MANUFACTURING MANAGEMENT



MANAGERS: HELP YOURSELF TO JOB SECURITY

THE THROW-AWAY PC

WHY FORGERS ARE JUMPING ON THE SPC BANDWAGON

MARCH 7, 1986 VOL. 229, NO. 5

IRON AGE
MANUFACTURING MANAGEMENT

Editorial 7
What other industry can make this statement?

Newswatch 11
National Steel starts up its new electrogalvanizing line.

Machine Tool Report 21
Maho's new plant: practicing what is preached.

Forging 25
Jumping on the statistical process control bandwagon.

Job Demand 29
Middle managers: Check all openings, even look far afield.

Throwaway PC 39
Small, inexpensive programmable controllers have arrived.

Employee Education 45
Corporations can't afford to stint on training costs.

Technically Speaking 49
A test system that monitors the growth of cracks.

Materials Report 57
Sheet demand provides some price firmness.

Order Trends 68
Total orders look good, but.....

Next Issue: Engineering plastics

Departments

EDITORIAL STAFF	8
LETTERS	8
INDUSTRY BRIEFS	18
PRODUCT & EQUIPMENT REVIEW	50
AD INDEX	58
BUSINESS STAFF	58
MANAGEMENT SERVICE CARD	59
P&P DATA 2/10	61
FERROUS SCRAP 2/10	63
STEEL PRICES	64
CLEARING HOUSE	66

IRON AGE (USPS 269-780) is published 24 times a year by CHILTON COMPANY, Chilton Way, Radnor, PA 19089. Chilton Co. is a division of Automotive Broadcasting Corporation, Inc., New York, N.Y. Second Class Postage Paid at Wayne, PA 19087 and additional mailing offices. IRON AGE is sent on a controlled free basis to qualified managers in U.S. metalworking companies. All others: Manufacturing Management editions: $52 one year, $85 Canada/Foreign (24 issues). Metalworking edition: $30 one year, $56 Canada/Foreign (12 issues). Single copies: $3.00. Cable: Chilton Philadelphia.

Send address changes to IRON AGE, P.O. Box 3017, Wheaton, IL 60189.

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CORPORATE EDUCATION IS NOT ON A DIET

Companies may be running lean and mean these days, but that doesn't mean they are slimming down their training programs.

BY PATRICIA S. AIMAN

The unskilled or uneducated worker may soon face the same fate as the dodo bird—extinction.

Companies are going to great lengths to educate and train their workers. In short, corporate education is very big business in itself and an ever growing part of the corporate world.

It's estimated that U.S. corporations spend more than $40 billion a year on employee education. More than 80 organizations have been established just to train executives.

Meanwhile, business schools that looked with disdain at those 'lightweight' management courses a few years back may now be sponsoring them—charging $100 to $800 per day per person. And a new breed of business evangelist is on the scene, traveling from company to company to stir up executive adrenalin, while commanding $10,000 or more for a 90-minute speech.

So, added to traditional seminars, conferences, workshops and "nice to know" sessions, employees are finding the surge in hand-ons, technological training juxtapositioned by some unusual educational practices.

Executives tell of play-acting or surviving in the woods and whitewater rafting to develop teamwork and peer trust. Others brainstorm at summer camp, or attempt to get their creative juices flowing by imitating animal noises.

Harry or Martha in accounting may regard such behavior as something new in 'voodoo economics,' but a number of *Fortune 500* companies find the sessions irresistible, and worthwhile in pursuing improved productivity and profits and fending off foreign competition.

The New York-based Conference Board, with financial assistance from the Student Loan Marketing Association (Sallie Mae), has tracked corporate education and training during the past five years.

Its survey, *Trends in Corporate Education and Training*, conducted by Seymour Lusterman among some 218 major companies, indicated an increasing number of employees in all major job categories are undergoing formal training—even in companies forced to make cutbacks in their workforce.

But this was apparent in the hard-pressed days of 1982, when a *Journal of Commerce* survey found that few companies planned to reduce their training budgets. Nearly half the survey respondents said their educational appropriations doubled from 1975 to 1982, and 80 pct said they planned to spend 30 pct more in 1983 than in 1982. That trend continues.

But are these corporate appropriations helping the bottom line? Apparently.

The Conference Board report indicated that more companies are using their programs effectively by linking them closer to overall corporate strategy.

Motorola, Inc., Schaumburg, Ill., seems convinced of the direct link between workforce training and corporate strategic goals. All training must be job-related and applied throughout the company (not on a limited basis). Also, training must be treated as a dual investment—in people and in the business.

Another survey respondent talked of the 'arm of corporate strategy' in describing his company's new approach to training: "Education in the past was an incoherent cottage industry in our company. The people who ran it had a constituency that covered their expenses by sending students. Courses proliferated, were redundant and oversegmented. The training department was an internal sales agency, measured by how many courses it sold."

Today, companies such as IBM, Xerox or GE describe their orientation as "needs-driven," seeing their people get the skills that are methodically identified.

Rapidly accelerating technology has delivered a one-two punch to Corporate America. While high tech has become a new form of training tool, it has simultaneously imposed new learning: production managers must understand computer-aided manufacturing, human resources managers depend on computerized information and typists must get proficient on word processors.

But electronic teachers such as computer-aided instruction, interactive video and satellite broadcasting are allowing companies to pace

training to individual, not just group, needs.

TV networking, too, has come into its own. Hewlett Packard has been using it for training in new products for sales, service and other support personnel, as well as for engineering education.

Not Moving Fast Enough

Still, the New York-based Work in America Institute (WAI) believes that management may not be moving fast enough to close the breach between 'pell mell' technologies and employee skills. It has undertaken a three-year study, *Training for New Technology*, to determine if that is true. (It should be out next year.)

Warned WAI President Jerome M. Rosow: "Unless training programs grow directly out of the business plan, then training becomes as vital as R&D, or equipment maintenance, or capital investment in new technology."

Nevertheless, the high tech explosion has backfired in some boardrooms. "The field is enormous and complex," explained a human resources-development vice president, "there's nothing you can't do with computer-based training, especially in conjunction with video. But there is a cost—in equipment and needed personnel."

Complained another: "Training has suddenly become so capital intensive, that it has put us in the hot seat. We must choose between alternate modes and models of equipment and risk recommending investments that prove to be unwise—in equipment and systems that quickly become obsolete—or we must recommend against all of them."

Too, rapidly accelerating technology has hung an albatross on some engineers. In the past, they could keep up-to-date by reading books, periodicals or attending university or professional society programs.

Now, the Conference Board estimates that a 25-year-old engineering graduate will have to be re-educated eight times during his or her 40-year career.

The Conference Board also revealed a trend toward the use of more outside instructors and consultants for in-house training programs, and nearly two-thirds of the respondents said they have expanded their education and training staffs over the last five years.

Many companies admit to changing their methods of assessing their training needs; while others noted an increased use of performance-appraisal systems to zero in on the training needs of key employees.

GE reported this shift in training gears: In the past, GE was preoccupied with executive education to the neglect of its first-line managers. But they were responsible for managing about 50 pct of the professional workforce—interviewing and hiring about 90 pct of new employees. Since many of these managers were not equipped to select, motivate or evaluate new personnel, GE instituted a new program for them. Attended by about 1,000 each year, worldwide, it has been described as "strong orientation toward increasing General Electric's competitiveness as well as focusing on traditional 'one-over-one' skills."

While heightened global competition, deregulation and other changes in the business environment have been recasting educational program decisions, a steel company official said that his corporate approach had changed from a bureaucracy into a more participative, innovative style, with clearly understood goals.

Other corporate officials cite competencies—intrapreneurial, marketing and others—that entail a blend of skill and knowledge and represent "new ways of thinking."

Of course, workplace training was on the agenda when the Conference Board projected its human resources outlook for 1986.

During that meeting in New York, Anthony P. Carnavele, chief economist of the American Society for Training and Development, emphasized that "workplace training can be a powerful lever for resolving many of the nation's economic and human problems," and urged much more spending on training and retraining—particularly down through the ranks.

How Much Industries Spent on Training In 1984

Industry	Average Spent per Employee
Mining	$566
Construction	127
Durable Goods	314
Nondurable Goods	260
Primary Metals	283
Machinery	430
Electrical Equipment	371
Aircraft	425
Instruments	484
Chemicals	405
Transportation	490

Source: Anthony P. Carnavele, American Society for Training and Development

Meanwhile, plant closings and worker layoffs are reinforcing this need, as unions clamor for more worker educational programs to keep employees updated on technological advances and sufficiently skilled to fill vacated positions.

Last year, to entice more companies to train or retrain, H.R. 1219, the National Training Incentives Act, was reintroduced by a bipartisan group in the House.

The bill provides employers with a 25 pct tax credit for training expenses over a five-year average—thus rewarding the type of retraining and on-the-job-training—and permitting workers to finance retraining with money withdrawn, without penalty or taxation from their IRA or annuity accounts.

As U.S. industry reaches out for greater productivity and an international competitive advantage, its education and training programs will continue to gain ground. Corporate strategies and teaching methods differ, but the trend in education is headed in one direction—up. □

PRICE & PRODUCTION DATA

(Effective February 10,1986)

Steel production by districts, thousands of tons (000 omitted)

	Last Week	Two Weeks Ago	Month Ago	Year Ago
Northeast Coast	202	179	181	163
Pittsburgh	219	206	219	198
Youngstown	110	112	101	101
Lake Erie	137	130	122	151
Detroit	141	141	128	134
Chicago	501	509	487	456
Cincinnati	101	100	86	87
St. Louis	77	72	73	71
Southern	210	227	200	173
Western	89	87	83	85
U.S. Production	1,787	1,763	1,700	1,619

Source: American Iron & Steel Institute

Lake Superior Ore Prices

51.50% Fe Natural delivered lower Lake ports unless otherwise stated. Rail transportation, handling and unloading may be charged to buyer. Coarse ore 80¢ premium.

Pellets (per iron unit natural)	gross-ton 58.0*
Pellets (per iron unit natural)	gross-ton 59.4**
Pellets (per iron unit natural)	gross-ton 72.5-86.9***
Mesabi, regular-unscreened	gross-ton $32.53
Mesabi, non-bessemer	gross-ton $30.03-31.53

*58.0¢—Mineral Services, Inc., as of 8-13-85. **59.4¢—Pickands Mather, 6-1-85 delivered hold of vessel, upper Lake ports. ***72.5¢—U.S. Steel, as of 8-16-85. 86.9¢—Oglebay Norton, 3-25-82, Huron, Maumee and Cleveland Ports, 2-26-82.

STEEL PRODUCTION, COMPOSITE PRICES

(Effective February 10,1986)

U.S. Steel Production	Last Week	Two Weeks Ago	To Date 1986	To Date 1985
Net tons, in thousands	1,787	1,763	9,685	8,533
Capability Utilization Rate	71.6	70.7	69.7	59.2

Composite Prices	This Week	Week Ago	Month Ago	Year Ago
Finished Steel Base* (¢/lb.—eff. 1/1/86)	24.607	24.607	24.607	27.582
Pig Iron** (Net ton=2000 lbs.)	$213.00	$213.00	$213.00	$213.00
Scrap No. 1 hvy.*** (Gross ton=2240 lbs.)	$ 75.50	$ 75.50	$ 73.17	$ 82.50
No. 2 bundles	$ 53.83	$ 53.83	$ 52.83	$ 54.83

Scrap Comparison (Gross Ton)

No. 1 steel, Pittsburgh	$ 76.50	$ 76.50	$ 73.50	$ 86.50
No. 1 steel, Philadelphia	72.50	72.50	71.50	80.50
No. 1 steel, Chicago	77.50	77.50	74.50	80.50
No. 1 bundles, Detroit	70.50	70.50	70.50	75.50
Low Phos., Youngstown	76.50	76.50	73.50	72.50
No. 1 mach'y cast, Pgh	68.50	68.50	68.50	71.50
No. 1 mach'y cast, Phila	93.50	92.50	92.50	98.50
No. 1 mach'y cast, Chi	109.50	109.50	104.50	111.50

*Finished Steel Composite: Weighted index of steel bars, plates, shapes, wire, rods, black pipe, hot and cold rolled sheets and strip.

**Pig Iron Composite: Based on average prices (foundry and basic) at Valley, Chicago and Philadelphia.

***Steel Scrap Composite: Average of No. 1 hvy. melting steel scrap and No. 2 bundles delivered to consumers in Pittsburgh, Philadelphia and Chicago.

NONFERROUS PRICES

(Effective February 10,1986) Prices obtained in trade based on representative tonnages per gross ton delivered to consumer unless otherwise stated.

Primary Metal Prices

(cents per lb.)	current price	last price	date of change
Aluminum (LME)	50.22	50.74	2/10/86
Copper (C)	66.50-69.00	67.00-69.00	2/7/86
Lead	17.75-19.00	18.00-19.00	2/10/86
Magnesium ingot	153.00	148.00	12/9/85
Nickel (LME)	175.80	178.43	2/10/86
Zinc	35.00	36.00	11/6/85

ALUMINUM: Avg. for last week & previous week. COPPER (C) is Samuel. LEAD, common grade. MAGNESIUM 99.8% pig, delivered. NICKEL: Avg. for last week & previous week. ZINC, high grade.

Antimony, American Laredo, Texas	$2.00
Beryllium-aluminum 5% Be, per lb. contained Be	$236.00
Beryllium-copper, per lb. cont. Be	$144.00
Beryllium 97% powder 200	$197.00
Cadmium, ton lots	$1.25-1.50
Calcium, ton lots, crown	$3.92
Chromium, 99.5% electro	$4.62
Cobalt, 99%, cathode	$11.70
Gold per troy oz.	$340.15
Indium, dollars per troy oz.	$2.50
Iridium, dollars per troy oz.	$430.00
Magnesium sticks, 10,000 lbs.	$2.02
Mercury, per 76-lb. f.o.b. N.Y.	$265.00-275.00
Molybdenum, lb. tech. moly oxides, 20 lb. MO can	$3.00-3.13
Palladium, per troy oz.	$98.00
Platinum, per troy oz.	$356.00
Rhodium, per troy oz.	$1,090.00
Silver ingots, per troy oz.	$5.91
Titanium sponge, melt grade	$3.40-3.55
Tungsten powder, hyd red.	$9.00-9.50
Vanadium	$6.00
Zirconium sponge	$12.00-17.00

(Per lb. unless otherwise noted)

Straits Tin Price

(U.S. cents per lb. EX-SMELTER, based on daily market in Kuala Lumpur in Malaysian dollars per kilo.)

Feb. 3—331.16	Feb. 6—317.15
Feb. 4—327.56	Feb. 7—316.22
Feb. 5—322.28	

Scrap Prices
Brass Mill Scrap

(Cents per lb. over 20,000 lbs. add ½¢ per lb.)

	Solids	Turnings
Copper	63	52
Yellow brass	53⅛	46
Red brass	57¼	49½
Comm. bronze	59½	50½
Mang. bronze	44	43¼
Free cutting rod ends	47	46

Custom Smelters Scrap

(Cents per lb., carload lots, del. refinery)

No. 1 copper wire	58
No. 2 copper wire	51
Light copper	42

Ingot Makers Scrap

(Cents per lb., carload lots, del. refinery)

No. 1 copper wire	54
No. 2 copper wire	47
Light copper	38
No. 1 composition	46
No. 1 comp. turnings	45
Hvy. yellow brass solids	29
Hvy. yellow brass turnings	26
Radiators	35

Dealers' Scrap

(Dealers' buying price f.o.b. New York in cents per pound)

Aluminum		
Segregated clippings	27	— 28
Mixed U.C. clips	23	— 25
Old sheets and cast	22	— 23
Borings and turnings	17	— 19
Duraluminum clippings	25	— 26
Copper and Brass		
No. 1 copper wire	46	— 47
No. 2 copper wire	39	— 40
Light copper	32	— 33
Radiators	31	— 32
No. 1 composition	39	— 41
No. 1 composition turnings	36	— 38
Cocks and faucets	28	— 30
Clean heavy yellow brass	27	— 28
Brass Pipe	28	— 29
New soft brass clippings	39	— 40
Lead		
Heavy soft lead	5	— 7
Whole batteries	1	— 3
Type metal	15	— 17
Electrotype	13	— 14
Nickel		
Nickel solids	110	—120
Nickel rod ends	110	—120
Nickel sheets, clips	110	—120
Nickel turnings	25	— 35
Zinc		
New zinc clippings	15	— 16
Old diecast zinc	11	— 13

EFFECTIVE FEBRUARY 10,1986

(Effective February 10,1986) Prices obtained in trade based on representative tonnages per gross ton delivered to consumer unless otherwise stated. Prices are the opinions of *Iron Age* editors and correspondents, based on contacts with dealers, brokers, generators and users in the industry on the effective date listed above.

Ferrous Scrap Prices

Pittsburgh

No. 1 hvy. melting	$ 76.00 to	$ 77.00
No. 2 hvy. melting	66.00 to	67.00
No. 1 dealer bundles	94.00 to	95.00
No. 1 factory bundles (auto)	94.00 to	95.00
No. 2 bundles	49.00 to	50.00
No. 1 busheling	88.00 to	89.00
Machine shop turnings	8.00 to	9.00
Shoveling turnings	43.00 to	44.00
Cast iron borings	42.00 to	43.00
Low phos. punchings plate	104.00 to	105.00
Heavy turnings	66.00 to	67.00
No. 1 RR hvy. melting	85.00 to	86.00
Rails, 2 ft. and under	101.00 to	102.00
Scrap rails, random lgth	86.00 to	87.00
RR specialties	96.00 to	97.00
No. 1 machinery cast	68.00 to	69.00
Cupola cast	61.00 to	62.00
Heavy breakable cast	30.00 to	31.00
Stainless		
18-8 bundles and solids	525.00 to	535.00
18-8 turnings	425.00 to	435.00

Chicago

No. 1 hvy. melting	$ 77.00 to	$ 78.00
No. 2 hvy. melting	72.00 to	73.00
No. 1 dealer bundles	98.00 to	99.00
No. 1 factory bundles (auto)	95.00 to	96.00
No. 2 dealer bundles	63.00 to	64.00
No. 1 busheling	91.00 to	92.00
Shredder scrap	90.00 to	91.00
Machine shop turnings	42.00 to	43.00
Mixed borings and turnings	43.00 to	44.00
Shoveling turnings	45.00 to	46.00
Cast iron borings	52.00 to	53.00
Low phos. forge crop	102.00 to	103.00
Low phos. punchings plate 1/4 in. and heavier	117.00 to	118.00
Low phos. 2 ft. and under	111.00 to	112.00
No. 1 RR hvy. melting	83.00 to	84.00
Scrap rails random lgth	86.00 to	87.00
Reroller rails	105.00 to	106.00
Rails, 2 ft. and under	106.00 to	107.00
RR couplers and knuckles	93.00 to	94.00
RR car axles	108.00 to	109.00
No. 1 machinery cast	109.00 to	110.00
Cupola cast	94.00 to	95.00
Stove plate	97.00 to	98.00
Steel car wheels	99.00 to	100.00
Stainless		
18-8 bundles and solids	485.00 to	495.00
18-8 turnings	395.00 to	405.00
430 bundles and solids	125.00 to	135.00
430 turnings	85.00 to	95.00

Philadelphia

No. 1 hvy. melting	$ 71.00 to	$ 74.00
No. 2 hvy. melting	62.00 to	65.00
No. 1 dealer bundles	87.00 to	90.00
No. 2 dealer bundles	47.00 to	50.00
No. 1 busheling	84.00 to	87.00
Shredder scrap	83.00 to	86.00
Machine shop turnings	24.00 to	27.00
Mixed borings and turnings	24.00 to	27.00
Shoveling turnings	39.00 to	42.00
Low phos. 5 ft. and under	77.00 to	80.00
Low phos. 2 ft. punchings	97.00 to	100.00
Electric furnace bundles	93.00 to	96.00
RR specialties	77.00 to	80.00
Rails, 2 ft. and under	100.00 to	103.00
Cupola cast	84.00 to	87.00
Heavy breakable cast	53.00 to	56.00
No. 1 machinery cast	92.00 to	95.00

Detroit

Brokers buying prices per gross ton on cars:

No. 1 hvy. melting	$ 54.00 to	$ 55.00
No. 2 hvy. melting	53.00 to	54.00
No. 1 dealer bundles	70.00 to	71.00
No. 2 bundles	30.00 to	31.00
No. 1 busheling	69.00 to	70.00
Drop forge flashings	45.00 to	46.00
Machine shop turnings	35.00 to	36.00
Mixed borings and turnings	14.00 to	15.00
Shoveling turnings	35.00 to	36.00
Cast iron borings	19.00 to	20.00
Heavy breakable cast	35.00 to	36.00
Mixed cupola cast	50.00 to	51.00
Automobile cast	73.00 to	74.00
Stainless		
18-8 bundles and solids	475.00 to	485.00
18-8 turnings	345.00 to	355.00
430 bundles and solids	115.00 to	125.00

Youngstown

Brokers buying prices per gross ton on cars:

No. 1 hvy. melting	$ 61.00 to	$ 62.00
No. 2 hvy. melting	58.00 to	59.00
No. 1 dealer bundles	79.00 to	80.00
No. 2 dealer bundles	39.00 to	40.00
Machine shop turnings	23.00 to	24.00
Shoveling turnings	23.00 to	24.00
Low phos. plate	76.00 to	77.00
Electric furnace bundles	66.00 to	67.00
Galvanized bundles	64.00 to	65.00

Cleveland

Brokers buying prices per gross ton on cars:

No. 1 hvy. melting	$ 59.00 to	$ 60.00
No. 2 hvy. melting	57.00 to	58.00
No. 1 dealer bundles	83.00 to	84.00
No. 1 factory bundles	74.00 to	75.00
No. 2 bundles	35.00 to	36.00
No. 1 busheling	73.00 to	74.00
Machine shop turnings	28.00 to	29.00
Shoveling turnings	28.00 to	29.00
Cast iron borings	19.00 to	20.00
Cut structural & plates 5 ft. and under	70.00 to	71.00
Cut structural & plates 2 ft. and under	92.00 to	93.00
Low phos. punchings plate	92.00 to	93.00
Foundry steel, 2 ft. & under	58.00 to	59.00
No. 1 RR hvy. melting	64.00 to	65.00
Rails, 2 ft. and under	93.00 to	94.00
Rails, 18 in. and under	95.00 to	96.00
No. 1 machinery cast	80.00 to	81.00
Mixed cast	47.00 to	48.00
Stainless		
18-8 bundles	480.00 to	490.00
18-8 turnings	350.00 to	360.00
430 bundles	120.00 to	130.00

Buffalo

Brokers buying prices per gross ton on cars:

No. 1 hvy. melting	$ 56.00 to	$ 57.00
No. 2 hvy. melting	46.00 to	47.00
No. 1 busheling	72.00 to	73.00
No. 1 dealer bundles	72.00 to	73.00
No. 2 bundles	33.00 to	34.00
Machine shop turnings	16.00 to	17.00
Mixed boring and turnings	16.00 to	17.00
Shoveling turnings	22.00 to	23.00
Cast iron borings	24.00 to	25.00
Low phos. plate	79.00 to	80.00
Structural and plate, 2 ft. and under	83.00 to	84.00
Rails, 2 ft. and under	82.00 to	83.00
Scrap rails, random lgth	64.00 to	65.00
No. 1 machinery cast	79.00 to	80.00
No. 1 cupola cast	64.00 to	65.00

St. Louis

No. 1 hvy. melting	$ 78.00 to	$ 79.00
No. 2 hvy. melting	65.00 to	66.00
Foundry steel, 2 ft.	72.00 to	73.00
No. 1 dealer bundles	89.00 to	90.00
No. 2 bundles	59.00 to	60.00
Machine shop turnings	23.00 to	24.00
Shoveling turnings	28.00 to	29.00
Cast iron borings	34.00 to	35.00
No. 1 RR hvy. melting	84.00 to	85.00
Rails, random length	74.00 to	75.00
Rails, 18 in. and under	97.00 to	98.00
RR specialties	81.00 to	82.00
Cupola cast	71.00 to	72.00
Heavy breakable cast	49.00 to	50.00
Stove plate	91.00 to	92.00
Steel car wheels	90.00 to	91.00
Rerolling rails	99.00 to	100.00
Unstripped motor blocks	54.00 to	55.00

Birmingham

No. 1 hvy. melting	$ 72.00 to	$ 73.00
No. 2 hvy. melting	68.00 to	69.00
No. 1 dealer bundles	72.00 to	73.00
No. 2 bundles	47.00 to	48.00
No. 1 busheling	72.00 to	73.00
Shredder scrap	88.00 to	89.00
Machine shop turnings	26.00 to	27.00
Shoveling turnings	40.00 to	41.00
Cast iron borings	39.00 to	40.00
Electric furnace bundles	67.00 to	68.00
Elec. furnace, 3 ft. & under	67.00 to	68.00
Structural and plate, 2 ft	90.00 to	91.00
Structural and plate, 4 ft	87.00 to	88.00
No. 1 RR hvy. melting	87.00 to	88.00
Scrap rails, random lgth	74.00 to	75.00
Rails, 2 ft. and under	90.00 to	91.00
Angles and splice bars	87.00 to	88.00
No. 1 cupola cast	84.00 to	85.00
Unstripped motor blocks	74.00 to	75.00

Cincinnati

Brokers buying prices per gross ton on cars:

No. 1 hvy. melting	$ 54.00 to	$ 55.00
No. 2 hvy. melting	53.00 to	54.00
No. 1 dealer bundles	74.00 to	75.00
No. 2 bundles	34.00 to	35.00
Machine shop turnings	9.00 to	10.00
Shoveling turnings	12.00 to	13.00
Cast iron borings	19.00 to	20.00
Low phos. 18 in. and under	77.00 to	78.00
Rails, random length	64.00 to	65.00
Rails, 2 ft. and under	79.00 to	80.00
No. 1 cupola cast	66.00 to	67.00
Heavy breakable cast	27.00 to	28.00
Drop broken cast	72.00 to	73.00

New York

Brokers buying prices per gross ton on cars:

No. 1 hvy. melting	$ 44.00 to	$ 45.00
No. 2 hvy. melting	35.00 to	36.00
No. 2 dealer bundles	20.00 to	24.00
Mixed borings and turnings	10.00 to	11.00
Machine shop turnings	4.00 to	6.00
Shoveling turnings	10.00 to	12.00
Clean cast, chem. borings	35.00 to	36.00
No. 1 machinery cast	79.00 to	80.00
Mixed yard cast	50.00 to	51.00
Heavy breakable cast	10.00 to	12.00
Stainless		
18-8 prepared solids	445.00 to	465.00
18-8 turnings	340.00 to	365.00
430 prepared solids	90.00 to	100.00
410 solids	75.00 to	85.00

Boston

Brokers buying prices per gross ton on cars:

No. 1 hvy. melting	$ 51.00 to	$ 53.00
No. 2 hvy. melting	41.00 to	43.00
No. 1 dealer bundles	53.00 to	55.00
No. 2 bundles	34.00 to	36.00
No. 1 busheling	59.00 to	61.00
Shredder scrap	61.00 to	63.00
Machine shop turnings	12.00 to	14.00
Shoveling turnings	18.00 to	20.00
No. 1 machinery cast	75.00 to	80.00
Mixed cupola cast	46.00 to	48.00
Heavy breakable cast	8.00 to	10.00

San Francisco

No. 1 hvy. melting	$ 43.00 to	$ 45.00
No. 2 hvy. melting	37.00 to	39.00
No. 1 dealer bundles	34.00 to	36.00
No. 2 dealer bundles	22.00 to	24.00
Machine shop turnings	8.00 to	9.00
Cast iron borings	8.00 to	9.00
No. 1 cupola cast	80.00 to	82.00

Los Angeles

No. 1 hvy. melting	$ 40.00 to	$ 42.00
No. 2 hvy. melting	34.00 to	36.00
No. 1 dealer bundles	31.00 to	33.00
No. 2 dealer bundles	18.00 to	20.00
Machine shop turnings	11.00 to	12.00
Shoveling turnings	10.00 to	11.00
Cast iron borings	8.00 to	9.00
Elec. furnace, 1 ft. and under (foundry)	70.00 to	72.00
No. 1 cupola cast	72.00 to	74.00

Seattle

No. 1 hvy. melting	60.00 to	62.00
No. 2 hvy. melting	51.00 to	53.00
No. 2 bundles	35.00 to	37.00
No. 1 cupola cast	89.00 to	90.00
Mixed yard cast	80.00 to	82.00

Hamilton, Ont.

Brokers buying prices per gross ton on cars:

No. 1 hvy. melting	$ 81.00
No. 2 hvy. melting, cut 2 ft. and under	72.00
No. 1 dealer bundles	87.00
No. 2 bundles	61.00
Mixed steel scrap	59.00
Bush. new fact. prep'd	81.00
Bush. new fact. unprp'd	64.00
Machine shop turnings	34.00
Short steel turnings	34.00
Mixed borings and turnings	19.00
Cast scrap	92.00

Houston

Brokers buying prices per gross ton on cars:

No. 1 hvy. melting	$ 72.00 to	$ 73.00
No. 2 hvy. melting	57.00 to	58.00
No. 2 bundles	42.00 to	43.00
Machine shop turnings	11.00 to	12.00
Crushed turnings	30.00 to	31.00
Shredder scrap	79.00 to	80.00
Cut structural plate, 2 ft. and under	101.00 to	102.00
Cut structural plate, 5 ft. and under	83.00 to	84.00
Unstripped motor blocks	57.00 to	58.00
Cupola cast	85.00 to	86.00

PRODUCER KEY
With Principal Offices

A7 Armco Inc., Middletown, Ohio
A8 Atlantic Steel Co., Atlanta, Ga.
A11 Atlantic Wire Co., Branford, Conn.

B1 Baron Drawn Steel Corp., Toledo, Ohio
B3 Bethlehem Steel Corp., Bethlehem, Pa.
B4 Blair Strip Steel Co., New Castle, Pa.
B5 Bliss & Laughlin Steel Co., Harvey, Ill.

C6 CF&I Steel Corp., Pueblo, Colo.
C10 Copperweld Steel Co., Warren, Ohio
C16 Connors Steel Co., Birmingham, Ala.
C20 Calumet Steel Div., Chicago Heights, Ill.

D1 Detroit Strip Div., Cyclops Corp.

E4 Elliot Bros. Steel Co., New Castle, Pa.

F1 Firth Sterling, Inc., McKeesport, Pa.

G2 Granite City Steel Div., National Steel Corp., Granite City, Ill.
G3 Great Lakes Steel Div., National Steel Corp., Ecorse, Mich.
G4 Greer Steel Co., Dover, Ohio
G5 Green River Steel Corp., Owensboro, Ky.
G6 Gibraltar Steel Corp., Buffalo, N. Y.
G7 Georgetown Steel Corp., Georgetown, S.C.

H1 Hercules Drawn Steel Corp., Livonia, Mich.

I2 Ingersoll Steel Div., Newcastle, Ind.
I3 Inland Steel Co., Chicago
I4 Interlake Steel Corp., Chicago

J2 Jessop Steel Corp., Washington, Pa.
J3 Jones & Laughlin Steel Corp., Pittsburgh
J4 Joslyn Mfg. & Supply Co., Chicago
J5 Judson Steel Corp., Emeryville, Calif.

K2 Keystone Consolidated Industries, Inc.
K3 Kentucky Electric Steel Co., Ashland, Ky.
K5 Kemco Div., Foote Mineral Co., Keokuk, Ia.

L2 La Salle Steel Co., Chicago
L3 Lone Star Steel Co., Dallas
L4 Lukens, Inc., Coatesville, Pa.

M2 McLouth Steel Products Corp., Detroit
M8 Mill Strip Products Div., National Steel Service Center, National Steel Corp.
M9 Molitrup Steel Products Co., Beaver Falls, Pa.
M11 Midwest Steel Div., National Steel Corp., Portage, Ind.

N1 Northeast Precision Steel Co., Boston
N4 Northwestern Steel & Wire Co., Sterling, Ill.
N6 Northwest Steel Rolling Mills, Seattle
N9 Nelsen Steel & Wire Co., Chicago
N10 North Star Steel Co., Saint Paul, Minn.

O2 Oregon Steel Mills, Portland, Ore.

P2 Phoenix Steel Corp., Claymont, Del.
P15 Philadelphia Steel and Wire Corp., Phila.

R3 Republic Steel Corp., Cleveland
R4 Ramco Steel Co., Buffalo, N. Y.
R5 Roblin Steel Corp., North Tonawanda, N.Y.
R7 Rome Strip Steel Co., Rome, N. Y.

S1 Sharon Steel Corp., Sharon, Pa.
S7 Stanley Works, New Britain, Conn.
S8 Superior Drawn Steel Co., Monaca, Pa.
S10 Seneca Steel Corp., Buffalo, N. Y.
S16 Southern Precision Steel Co., Gulfport, Miss.

T4 Thomas Steel Strip Co., Warren, Ohio
T5 Timken Co., Steel Division, Canton, Ohio
T7 Texas Steel Co., Fort Worth, Tex.
T9 Triumph Electro Corp., Chicago
T10 Tennessee Forging Steel Corp., Harriman, Tenn.
T11 Teledyne Columbia Summerill, Carnegie, Pa.

U1 United States Steel Corp., Pittsburgh

W3 Weirton Steel Corp., Weirton, W. Va.
W5 Wheeling-Pittsburgh Steel Corp.
W7 Wilson Steel & Wire Co., Chicago
W10 Wyckoff Steel Div., Ampco-Pittsburgh Corp., Pittsburgh
W14 Whittar Steel Strip Div., Whittar Industries, Ltd., Detroit

STEEL SERVICE CENTER PRICES

Price, Dollars per 100 lb

Prices are based on 58 prices supplied to Iron Age by 12 leading domestic service centers deemed representative by Iron Age and then weighted based on the reported relevant expenditures. Prices are recommended to reflect the range in selection prices obtained by any individual metal service center.

Cities*	Sheets			Strip	Plates	Shapes	Bars		Alloy Bars			
	Hot-rolled 10 ga x 36 x 120	Cold-rolled 20 ga x 36 x 120	Galv (hot dip) 16 ga x 36 x 120	Hot-rolled 1/8 x 12	1/4 x 72 x 240	Structural W 12 x 26	Hot-rolled 1/2 x 1 rounds	Cold-finished 1/2 x 1 rounds	Hot-rolled 8620 1" rounds, Annealed	Hot-rolled 4140 1" rounds, Annealed	Cold-Drawn 8620 1" rounds, Annealed	Cold-Drawn 4140 1" rounds, Annealed
Atlanta	25.42	32.87	33.16	30.18	26.54	23.92	22.00	31.51	38.29	45.00	60.74	68.31
Baltimore	23.84	28.01	32.99	34.62	28.73	28.22	21.24	33.34	49.07	53.40	62.23	68.45
Birmingham	24.11	29.03	32.65	29.23	25.42	23.07	23.38	31.76	48.64	49.80	60.07	82.19
Boston	35.29	40.89	47.51	39.96	33.99	30.53	26.61	38.98	44.80	49.10	64.63	59.35
Buffalo	30.94	35.56	41.74	32.27	29.31	25.30	21.03	32.43	35.90	42.58	54.96	58.52
Chicago	27.15	32.25	35.76	28.40	23.50	22.05	18.79	27.80	32.89	36.45	41.24	49.18
Cincinnati	25.03	30.03	33.23	26.35	25.53	19.85	19.00	28.18	33.83	38.75	43.05	49.55
Cleveland	29.34	33.48	36.87	27.62	26.15	21.88	19.00	30.30	36.30	42.10	47.85	48.13
Denver	33.60	39.65	41.28	31.73	34.23	27.00	22.18	35.43	39.48	48.58	53.38	60.18
Detroit	25.18	30.13	33.43	26.08	25.20	20.20	18.65	28.38	33.52	38.68	42.98	49.45
Houston	36.55	34.30	38.65	37.40	31.20	23.80	22.18	40.58	43.50	48.13	53.68	61.55
Kansas City	32.58	37.75	41.28	35.32	27.67	25.07	20.97	29.53	35.67	39.97	45.90	51.75
Los Angeles	28.80	34.57	38.40	29.93	33.18	36.37	28.72	42.73	59.60	63.17	64.61	71.79
Memphis	22.37	30.40	31.64	30.20	24.79	23.88	22.08	32.09	33.69	44.20	58.09	64.93
Milwaukee	26.59	31.64	35.09	29.78	24.93	23.01	18.93	27.26	32.83	36.81	41.46	48.61
New York	32.58	38.82	43.90	36.51	31.66	25.04	22.31	31.78	35.48	41.28	49.95	49.70
Philadelphia	28.65	33.78	38.63	36.70	28.73	23.73	20.50	30.80	38.17	44.95	55.23	57.73
Pittsburgh	27.41	40.62	46.44	33.46	35.94	27.19	24.11	29.28	35.43	41.15	47.45	51.60
Portland	25.98	29.47	36.46	31.41	32.56	34.45	27.54	37.58	46.18	51.65	63.57	.....
San Francisco	30.50	36.08	38.63	43.43	35.43	38.18	26.73	46.15	59.38	63.00	64.63	78.13
Seattle	27.78	28.19	29.04	29.92	30.82	31.75	32.00	33.70	34.72	35.17	36.85	55.16
Spokane	20.41	28.65	28.65	32.28	32.02	33.63	23.45	36.94	39.45	42.17	.....	54.16
St. Louis	27.94	32.09	33.62	26.09	25.89	19.68	19.37	29.41	35.53	40.90	47.01	51.72
St. Paul	28.23	33.36	34.92	30.76	25.49	23.51	18.79	28.95	35.35	40.60	46.59	51.59

Base Quantities: All HR products may be combined for quantity. Hot-rolled sheet: 10 ga x 36 x 96—120. Cold-rolled sheet: 20 ga x 36 x 120. Galv. sheet: 16 ga x 36—120. Hot-rolled strip: 1-5/8" x 1". Plate 1-4" x 64". Shapes: I Beams 6 x 12.5. Hot-rolled bar: Rounds 3/4-2-15/16. Cold finished bar: C 1018—1" rounds. Alloy bar: Hot-rolled 8620—1-5.8" round. Cold drawn—1" round. Hot-rolled 4140—1-5.8" round. Cold drawn—1" round. Check local supplier for additions or deductions from base.

*Prices at all points include metropolitan delivery charges.

Codes identify Producers listed on p. 64. (Prices quoted are mill base prices, in cents per pound, unless otherwise noted and do not reflect extras or surcharges.)
N.A. = Not available.

Billets, Blooms, Slabs

(Dollars per net ton)

Carbon Reralling.
Midwest
W5 $366.00
N4 $366.00
West
C6 $346.00
Carbon Forging.
East
B3,2) $473.00
C10 $473.00
Midwest
W5 $453.00
S1 $473.00
I3 $473.00
C10 $473.00
K2 $473.00
West
C6 $420.00
Alloy.
East
B3 $512.00
C10 $512.00
Midwest
W5 $492.00
I3 $512.00
C10 $512.00
S1 $512.00
West
C6 $469.00

Structurals

Carbon.
East
B3 23.90
J3 23.90
Midwest
C20 22.90
W8 22.90
I3 23.90
T10 23.90
N4 23.90
South
T10 22.90
High-Strength, Low Alloy.
East
B3 23.90
J3 23.90
Midwest
N4 23.90
W8 24.15
I3 23.90
Wide Flange, Carbon.
East
B3 20.65
U1 22.75
J3 23.90
Midwest
U1 22.75
N4 23.90
I3 23.90
Wide Flange,
High Strength Low Alloy.
East
U1 24.30
Midwest
U1 24.30

Strip

Hot Rolled, Carbon.
Cut (I Edged, all widths
East
U1 20.75
B3 20.75
J3 22.05
Midwest
D1 22.05
I4 22.85
J3 22.05
W3 22.05
G2, G3 20.75
N4 22.55
W5 23.75
U1 20.75
A7 20.75
I3, B3 20.75
M2 22.05
S1 20.75
Cold Rolled, Carbon Max .25%
East
E4 29.75
S10 29.60
P15 24.80
R7 36.20
B4 36.60
G6 36.175
Midwest
I4 38.30
W14 32.80
J4 34.05
S1 37.05
High Strength, Hot Rolled,
Low Alloy, Cut Edge & Mill Edge,
All widths, (plus extras)
Midwest
M2 22.05
W3 22.05
J3 22.05
G2, G3 20.75
S1 23.75
A7 25.35
High Strength, Cold Rolled,
Low Alloy, Mill Edge
Midwest
R7 44.65
S1 37.05
Alloy, Hot Rolled,
Midwest (plus extras)
S1 26.10
I4 25.20
Alloy, Cold Rolled,
East (plus extras)
E4,M3 43.35
B4 49.75
R7 42.95
P15 32.10
Midwest
I4 44.30
S1 44.80

Sheets

Hot Rolled, Carbon (18 Ga & Heavier)
East
B3 20.75
J3 22.05
U1 20.75
Midwest
M2, W3 22.05
D1 22.05
J3 22.05
G2, G3 20.75
I4 22.45
U1 20.75
S1, B3 20.75
I3 23.75
A7 23.75
W5 23.75
West
U1 21.25
Cold Rolled, Class 1
East
B3(2) 25.15
J3 26.15
U1 25.15
Midwest
W3 26.15
M2 26.15
G2, G3 25.15
M11 25.15
J3 26.15
D1 26.15
U1 25.15
S1 25.15
B3 25.15
I3 28.15
A7 28.15
W5 28.15
West
U1 25.65
Galvanized (hot dipped),
East
B3(2) 27.30
U1 27.30
Midwest
I3 28.00
D1 28.00
W3 28.00
Y1 28.00
G2, M11 27.30
U1 27.30
S1 30.30
W5 30.30
I3 30.30
A7 30.30
West
U1 27.80
Enameling,
Midwest
U1, S1 26.65
I3 29.65
A7 29.65
J3 27.65
Long Terne,
Midwest
W5 31.65
A7 31.65
U1 31.65

Tinplate

Electrolytic Tinplate
Single Reduced (70 lb)
East per base box
J3 26.29
U1 30.12
Midwest
U1 30.12
J2 26.29
M11 28.61
W3 26.29
W5 30.12
West
U1 30.62
South
U1 30.12
Double Reduced (55 lb)**
Midwest
M11 22.84
J3 21.49
U1 24.33
W3 21.49
W5 24.33
West
U1 24.83
South
U1 24.33
Black Plate
Single Reduced (70 lb)*
East
B3 26.55
Midwest
J3, W3 24.01
I3 24.57
W5 26.55
U1 26.55
M11 27.30
West
U1 26.55
Double Reduced (55 lb)
East
B3 21.32
Midwest
U1, M11 21.32
W5 21.32
W3, J3 18.93
West
U1 21.32
South
U1 21.32
*75 lb — base weight extra 69¢
**50 lb — base weight extra $1.40

Bars

Carbon Steel, Hot Rolled
(Special quality)
East
R5 25.80
K3 25.80
J3 25.80
C10 27.05
B3 27.05
Midwest
I4 26.00
I3 27.05
T10 25.80
C20, N4 25.80
K2 25.80
A7 20.25
West
C6 24.45
South
A8 20.65
Cold Finished Carbon
East
A11 22.15
T11, S8 31.00
J3(4), L2 31.00
M8, W10 31.00
N1 24.475
R4, B4 33.25
C10 31.00
Midwest
W10 33.25
J3 31.00
B1 33.45
L2 30.75
N9 31.00
W14 22.20
B5, M9 34.75
South
J3 31.95
Alloy, Hot-Rolled,
East
R5 27.95
K3 27.95
J3 29.20
C10 29.20
Midwest
I3, C10 29.20
I4 27.35
A7 20.25
West
C6 26.60
South
A8 22.00
Alloy, Cold-Drawn,
East
L2 35.20
N1 37.90
R4 37.10
J3, W10, L2 34.85
T11, S8 34.85
C10 34.85
Midwest
J3, W10, C10 34.85
B1 37.30
N9, L2 34.85
B5, M9 38.60
South
J3 35.85

Plates

Carbon Steel
East
B3, U1 18.25
L4 18.25
P2 18.25
J3 26.75
Midwest
B3, U1 18.25
I3 25.75
J3, A7 22.80
I4 25.75
S1 25.75
West
U1 18.25
O2 23.00
South
U1 18.25
Alloy East
U1 28.55
P2, I4 33.55
J3 34.55
Midwest
U1 28.55
I4 33.55
West
O2 31.00
South
U1 28.55

Wire

Carbon Steel
East
B3 27.10
A11 22.15
Midwest
N4, W7 27.40
K2 24.20
South
A8 22.85
West
C6 24.95

Wire Rod

East
B3(2) 22.35
Midwest
N4, K2 22.35
U1 24.10
A7 22.00
West
C6 21.45
South
G7 22.35

TOTAL ORDERS LOOK GOOD, BUT ...

New orders for durable goods closed out the year in a burst of glory. At least, the overall figures for December looked good.

Orders in December rose by 4.3 pct from November. That sure looked like good news after order tumbles in four of the previous five months.

But data on orders for December—as is true for much of business data these days—was lopsided. The December gain, a $4.4 billion one, was accounted for entirely-and more-by a $6.1 billion jump in orders for transportation equipment. And most of that big dollar gain was due to a big bunching of orders for commercial aircraft.

Machinery lines offer a good example of the recent mixed state of orders. Orders going to makers of electrical machinery were up 7 pct in December, the strongest month-to-month rise since June.

But producers of nonelectrical machinery saw their orders contract by 12.4 pct in the closing month of the year. This was the third decline in the last four months for this product line.

Notably, December marked the eighth month of a downward trend in inventories held by durable goods producers. This inventory tightening probably more reflects shaky confidence of executives on business and tax law prospects than it does widespread use of new stock control techniques.

The year closed with total durables new orders up 3.7 pct over 1984. After allowing for inflation, that meant that last year was a wash—the same as in 1984.

Much of the strength in orders last year was centered in fabricated metal products; these were up 20 pct. Transportation equipment was up almost 6 pct. Machinery and primary metals orders were down a bit.

Billions of Dollars, Seasonally adjusted Monthly Total, unless otherwise noted Source: U.S. Dept of Commerce		Latest Month or Qtr.	Previous Month or Qtr.	Same Period Year Ago
CAPITAL EXPENDITURES (Annual Rates)				
U.S. Industry, Total	1st Qtr*	$402.1	$389.0	$371.2
Manufacturing, Total	1st Qtr*	154.7	155.7	145.7
Manufacturing, Durable Goods	1st Qtr*	74.6	73.5	69.9
Mining Industry	1st Qtr*	15.8	15.2	15.2
KEY INDICATORS, Durable Goods Manufacturing				
New Orders	Dec.	108.2	103.8	101.3
Shipments	Dec.	106.7	107.0	103.9
Inventories	Dec.	188.8	190.3	191.1
Unfilled Orders	Dec.	352.9	351.3	345.4
NEW ORDERS, METALWORKING				
Capital Goods Producers, Nondefense Industries	Dec.	30.6	25.8	26.9
Capital Goods Producers Defense Industries	Dec.	6.5	6.8	7.4
Primary Metals, Total	Dec.	10.4	10.6	10.1
Steel (SIC 331)	Dec.	4.1	4.4	4.2
Iron & Steel Castings (SIC 332)	Dec.	1.1	1.6	1.2
Nonferrous Metals	Dec.	5.2	4.6	4.7
Nonelectrical Mach.-Equip. Industries, Total	Dec.	15.8	18.0	16.8
Engines & Turbines	Dec.	1.4	1.6	1.6
Farm Machinery & Equipment (Shipments)	Dec.	0.9	0.9	0.8
Construction, Mining & Mat. Hdlg. Equip	Dec.	2.9	3.0	2.6
General Industrial Machinery	Dec.	1.2	1.5	1.2
Fluid Power Equipment** (index-1972=100)	Dec.	265.0	280.0	231.0
Metalworking Machinery	Dec.	0.8	0.7	1.1
Machine Tools, Total ($Mill., Unadjusted)***	Dec.	177.1	195.1	255.2
Machine Tools, Metalcutting***	Dec.	117.8	171.6	159.1
Machine Tools, Metalforming***	Dec.	59.3	23.5	96.1
Electrical Mach. & Equip. Industries, Total	Dec.	17.4	16.3	15.1
Elec. Transmission Equip. & Ind. Apparatus	Dec.	2.5	2.2	2.4
Household Appliances	Dec.	1.5	1.5	1.5
Communication Equipment	Dec.	5.2	5.5	5.6
Transportation Equipment, Total	Dec.	30.3	24.2	26.7
Motor Vehicles & Parts (Shipments)	Dec.	17.4	18.1	17.4
Aircraft, Missiles & Parts	Dec.	12.0	6.0	8.1
Shipbuilding & Military Tanks	Dec.	0.4	-0.5	0.7
Fabricated Metal Products, Total	Dec.	14.2	15.3	12.8
Instruments, Total	Dec.	5.0	4.8	4.6

*Est.—Commerce Dept; **Source: National Fluid Power Assn.; ***Source: NMTBA

APRIL 4, 1986 VOL. 229, NO. 7

IRON AGE
MANUFACTURING MANAGEMENT

Editorial 7
Is more of the same the game?

Newswatch 15
Detroit is boosting its usage of stainless and galvanized steel.

Service Centers 29
The metal distributors are doing more for their customers.

Second Quarter Forecast 40
This year's economic growth won't be shared by all.

STEEL	43	APPLIANCES	57
NONFERROUS METALS	45	MATERIAL HANDLING	57
AUTOMOTIVE	46	CASTINGS	58
HEAVY EQUIPMENT	46	FORGINGS	58
MACHINE TOOLS	47	WELDING	60
FLUID POWER	47	HEAT TREATING	60
METAL COATINGS	49	FASTENERS	62
PLASTICS	49	STAMPINGS	62
COMPUTERS	52	AIRCRAFT	65
INSTRUMENTS & CONTROLS	52		

Welding 67
Just whose job is weld quality?

Materials Report 89
Steel shipments, operating rates and prices are on the rise.

Order Trends 100
The plodding trend holds for orders.

Next Issue: Fitting Robots into The Factory

Departments

EDITORIAL STAFF	8
LETTERS	8
INDUSTRY BRIEFS	20
PERSONNEL TOUCH	23
PRODUCT & EQUIPMENT REVIEW	80
AD INDEX	90
BUSINESS STAFF	90
MANAGEMENT SERVICE CARD	91
P&P DATA 3/17	94
FERROUS SCRAP 3/17	96
CLEARING HOUSE	98

IRON AGE (USPS 269-280) is published 24 times a year by CHILTON COMPANY, Chilton Way, Radnor, PA 19089. Chilton Co. is a division of American Broadcasting Companies, Inc. New York, N.Y. Second Class Postage Paid at Wayne, PA 19087 and additional mailing offices. IRON AGE is sent only controlled free basis to qualified managers in U.S. metalworking companies. All others, Manufacturing Management edition—$52 one year; $65 Canada, Foreign (24 issues). Metalsproducer edition—$30 one year; $36 Canada, Foreign (12 issues). Single copies $3.00. Cable Chilton, Philadelphia.
Send address changes to IRON AGE, P.O. Box 3037, Wheaton, IL 60189.

Chilton
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PUBLICATION HAVE BEEN FILMED

Cov. 1, p. 3, 46, 50, 52,

64-65, 68.